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Application Number: 10/604,573

Examiner: Shawn Riley Art Unit: 2838

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(Currently amended) ABSTRACT

A digital core embodied within a semiconductor die that requires plural separate power supply voltage domains is situated within any of a variety of integrated circuit packaging technologies. Within the integrated circuit package including this semiconductor die also exists a switch mode DC-to-DC voltage converter of the highest efficiency, a synchronous step-down regulator powering the entire integrated circuit from one supply voltage. The components contained within the integrated circuit package along with the semiconductor die include the switch mode power supply's power switching transistors, inductor core and windings, digital open-loop output voltage fixing circuitry, output capacitor, and substrate for mounting said components when integrated within a packaging technology that does not already include a substrate.

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